

FEDERAL AVIATION AGENCY

Washington 25, D. C.

TECHNICAL STANDARD ORDER

Regulations of the Administrator

Part 514

SUBJECT: AIRBORNE WEATHER RADAR EQUIPMENT

TSO-C63

Technical Standard Orders for Aircraft Materials,
Parts, Processes, and Appliances

Part 514 contains minimum performance standards and specifications of materials, parts, processes, and appliances used in aircraft and implements the provisions of sections 3.18, 4a.31, 4b.18, 6.18 and 7.18 of the Civil Air Regulations. The regulation uses the Technical Standard Order system which, in brief, provides for FAA-industry cooperation in the development of performance standards and specifications which are adopted by the Administrator as Technical Standard Orders, and a form of self-regulation by industry in demonstrating compliance with these orders.

Part 514 consists of two subparts. Subpart A contains the general requirements applicable to all Technical Standard Orders. These provisions are summarized below for the convenient reference of the public. Subpart B contains the technical standards and specifications to which a particular product must conform, and each Technical Standard Order is set forth in the appropriate section of Subpart B. The subject Technical Standard Order is printed below. ANY TECHNICAL STANDARD ORDER MAY BE OBTAINED BY SENDING A REQUEST TO FAA, WASHINGTON 25, D. C.

SUBPART A--GENERAL

This subpart provides, in part, that a manufacturer of an aircraft material, part, process, or appliance for which standards are established in Subpart B, prior to its distribution for use on a civil aircraft of the United States, shall furnish a written statement of conformance certifying that the material, part, process, or appliance meets the applicable performance standards established in this part. The statement of conformance must be signed by a person duly authorized by the manufacturer, and furnished to the Chief, Engineering and Manufacturing Division, Bureau of Flight Standards, Federal Aviation Agency, Washington 25, D. C.

Subpart A also requires appropriate marking of materials, parts, processes, and appliances as follows:

- (a) Name and address of the manufacturer responsible for compliance,
- (b) Equipment name, or type or model designation,
- (c) Weight to the nearest pound and fraction thereof,
- (d) Serial number and/or date of manufacture, and
- (e) Applicable Technical Standard Order (TSO) number.

In addition, Subpart A provides that no deviation will be granted from the performance standards established in Subpart B, and that the Administrator may take appropriate action in the event of noncompliance with Part 514.

SUBPART B

§ 514.68 Airborne weather radar equipment (for air carrier aircraft) - TSO-C63--(a) Applicability--(1) Minimum performance standards. Minimum performance standards are hereby established for airborne weather radar equipment which is to be used on civil aircraft of the United States engaged in air carrier operations. New models of airborne weather radar equipment manufactured for use on civil air carrier aircraft on or after December 1, 1959, shall meet the minimum performance standards as set forth in Radio Technical Commission for Aeronautics' Paper entitled "Minimum Performance Standards - Airborne Weather and Ground Mapping Radar Operating Within the Radio Frequency Bands of 5250 to 5440 Mc and 9300 to 9500 Mc," Paper 148-59/DO-96 dated August 11, 1959.^{1/} Radio Technical Commission for Aeronautics' Paper 100-54/DO-60^{1/} which is incorporated by reference in and thus is a part of Paper 148-59/DO-96 has been amended by Paper 256-58/EC-366 dated November 13, 1958. This amendment is also a part of the minimum performance standards. An exception to these standards is covered in subparagraph (2) of this paragraph.^{2/}

(2) Exception. (i) Radio Technical Commission for Aeronautics' Paper 100-54/DO-60, and amendment Paper 256-58/EC-366 dated November 13, 1958, outline environmental test procedures for equipment designed to operate under three environmental test conditions as specified therein under Procedures A, B, and C. Only airborne weather radar equipment which meets the operating requirements as outlined under Procedure A or Procedure B of Paper 100-54/DO-60, as amended, is eligible under this section.

(ii) The vibration values specified below may be used for indicators designed exclusively for installation in the cockpit area of aircraft in lieu of those specified in Paper 148-59/DO-96.

Amplitude: 0.015" (0.03" total excursion)
Frequency: Variable 10-55 cps
Maximum Acceleration: 3.0g

(b) Marking. In addition to the information required in § 514.3, equipment which has been designed to operate over the environmental conditions as outlined in Procedure A of RTCA Paper 100-54/DO-60, as amended, shall be marked as Category A equipment. Equipment which has been designed to operate over the environmental conditions outlined in Procedure B of this same paper shall be marked as Category B equipment.

^{1/}Copies of these papers may be obtained from the RTCA Secretariat, Room 1072, T-5 Building, 16th and Constitution Avenue, N. W., Washington 25, D. C. Paper 148-59/DO-96, 50 cents per copy; Paper 100-54/DO-60, 20 cents per copy.

^{2/}In addition to the performance standards herein, airborne weather radar when installed in aircraft must meet installation requirements as well as functional and reliability flight tests of the pertinent airworthiness sections of the Civil Air Regulations.

(c) Data requirements. One copy each of the manufacturer's operating instructions, schematic diagrams, and installation procedures shall be furnished the Chief, Engineering and Manufacturing Division, Federal Aviation Agency, Washington 25, D. C., with the statement of conformance.

(d) Previously approved equipment. Airborne weather radar equipment approved prior to December 1, 1959, may continue to be manufactured under the provisions of its original approval.

(e) Effective date. December 1, 1959.